

## ABSTRACT

*A* It is an object of the present invention to provide a composite material having low thermal expansivity, high thermal conductivity, and good plastic workability, which composite material may be applied to semiconductor devices and many other uses.

*C* The composite material is composed of metal and inorganic particles having a smaller coefficient of thermal expansion than said metal. It is characterized in that said inorganic particles dispersed in such a way that 95% or more of them (in terms of their area in cross-section) form aggregates of complex configuration joining together.

*C* The composite material contains 20-80 vol% of copper oxide, with the remainder being copper. It has a coefficient of thermal expansion of  $5 \times 10^{-6}$  to  $14 \times 10^{-6}/^{\circ}\text{C}$  and thermal conductivity of 30-325 W/m $\cdot$ K in the range of room temperature to 300 $^{\circ}\text{C}$ . It is suitable for the radiator plate of semiconductor devices and the dielectric plate of electrostatic attractors.

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